IN THE CLAIMS:

1 - 10. (canceled)

11. (New) A method of producing a DNA microarray which comprises forming an activated layer on a substrate which has a storing region and an address specifying the storing region on a concentric circle- or spiral-like track on a surface of the substrate, which can be tracked by an optical beam;

providing a disk motor for rotation control of the substrate;

providing an object lens which irradiates the optical beam on the track, and the optical beam follows the track by a tracking servo mechanism which controls a position of the object lens;

providing an address reading equipment which reads the address showing the storing region by the optical beam to specify the storing region;

after irradiating the activated layer in the storing region 1 using an optical power control device for controlling an irradiation power at a same or different irradiation power as reading the address 1;

adding a first nucleotide having a protective group at a terminal end at least in the storing region 1 on the substrate, bonding the first nucleotide to the first storing region specified

by the address 1, and removing nucleotides other than the first nucleotide bonded in the storing region 1;

next irradiating an optical beam in the storing region 2 with the address 2 to activate the storing region 2, and bonding a second nucleotide having a protective group at a terminal end to the storing region 2;

bonding the first nucleotide to the storing region 1 with the address 1, bonding the second nucleotide to the storing region 2 with the address 2, and bonding the third nucleotide with the storing region 1 after irradiating an optical beam at the storing region 1 with the address 1 to remove a protective group of the first nucleotide, and then bonding the fourth nucleotide with the storing region 2 after irradiating an optical beam at the storing region 2 with the address 2 to remove a protective group of the second nucleotide;

repeating the same operation as above using a nucleotide having a protective group in a predetermined order and controlling similarly for the storing region with the address 3 and subsequent addresses;

and producing an objective DNA having a nucleotide sequence at the storing region specified by each address.

12. (New) A method of producing a DNA microarray according to Claim 11 wherein the activated layer is formed on the substrate by providing a substance which can be activated photochemically.

13. (New) A method of producing a DNA microarray according to Claim 11 wherein a solution containing a nucleotide is spin-coated to add the nucleotide and, a washing liquid is spin-coated to remove the bonded nucleotide.

14. (New) A method of producing a DNA microarray which comprises forming an activated layer on a substrate which has a storing region, having and an address specifying the storing region, on a track which can be tracked by an optical beam on a surface of said substrate;

specifying the storing region by reading the address showing a predetermined region by the optical beam;

adding a first nucleotide having a protective group at the terminal end, after irradiating the activated layer in the first storing region for controlling an irradiation power at a same or different irradiation power as reading an address 1;

bonding the first nucleotide to the first storing region specified by address 1, and removing nucleotides other than the

first nucleotide bonded in the storing region 1;

next irradiating an optical beam in a second storing region of the address 2 to activate the second storing region, and bonding a second nucleotide having a protective group at the terminal end to the second storing region;

bonding the first nucleotide to the first storing region of the address 1, bonding the second nucleotide to the second storing region of the address 2, and bonding a third nucleotide after irradiating an optical beam at the first storing region of the address 1 to remove the protective group of the first nucleotide, and then bonding a fourth nucleotide after irradiating an optical beam at the second storing region of the address 2 to remove the protective group of the second nucleotide;

repeating the same operation as above using a nucleotide having a protective group in a predetermined order and controlling similarly for the storing region with the address 3 and subsequent addresses; and producing an objective DNA having a nucleotide sequence at the storing region specified by each address.

15. (New) A method of removing a protective group of nucleotide which comprises forming a storing region and an address specifying the storing region on a track which can be tracked by an

optical beam on a substrate; arranging a nucleotide having a protective group in two or more storing regions; specifying the storing region by reading the address showing a predetermined region by the optical beam; irradiating the stored nucleotide having a protective group by the above-mentioned optical beam; removing the protective group of the nucleotide having the protective group stored in the storing region.

16. (New) A method of producing a DNA microarray according to Claim 11 which comprises a step of controlling a reaction of the protective group of a nucleotide by giving a wavelength dependency to the light wave length absorption characteristic of the protective group of the nucleotide and by changing the wavelength of an irradiated optical beam.

17. (New) A method of distinguishing a DNA microarray which comprises discriminating a proper DNA by scanning the DNA of the obtained DNA microarray disk by an optical beam.

18. (New) A method of using a DNA microarray which comprises inspecting a produced DNA, selecting an address in which a proper DNA exists, recording information of the selected address on a

recordable portion of the substrate having DNA disposed thereon, and using only DNA existed in the storing region of the selected address.

19. (New) A substrate for use in the producing method of a microarray of Claim 11 characterized in that the substrate includes the address by protrudent pits and depressed pits, and has a storing region of a depressed part or a protrudent part of a pregroove or a flat region, a depressed pit or a protrudent pit with a form like a soccer stadium that can be identified by prepit.

20. (New) A substrate for use in the producing method of a microarray of Claim 11 which has a recordable portion on a specific area of the substrate.

21. (New) A spotting apparatus for spotting liquid containing probe DNA or protein, which comprises providing a pregroove and an address information specifying thereof, on a concentric circle- or spiral-like track which can be tracked by an optical beam on a surface of a substrate, and controlling rotation of the substrate;

irradiating optical beam via an object lens at the pregroove, receiving the reflection beam with the first photodetector, after

constituting tracking servo which make the position of the object lens controllable so that the irradiating beam of the object lens follow the pregroove, arranging equipment means which has nozzles discharging the spotting liquid containing probe DNA or protein at the pregroove,

forming a second photodetector which detects the beam penetrated the pregroove and which has at least two divided cells consolidatedly with discharging equipment to detect the relative position between discharging nozzle of the equipment and the pregroove,

obtaining a detection output indicating a relative position between the above-mentioned discharging nozzle and the above-mentioned pregroove using said second photodetector, controlling an optical block constituting the above tracking servo and the traverse unit motor controlling the consolidated movement of above-mentioned discharging equipment and the second photodetector by the detection output,

and arranging the spotting liquid discharged from the discharging equipment on the pregroove.

22. (New) A substrate for use in the producing method of a microarray of Claim 15, wherein a first reflecting layer is formed

on the substrate, and at least one layer of light-permeable film is formed on the first reflecting layer, a refractive index of the light-permeable film being smaller than a refractive index of the substrate and larger than a refractive index of air, and the electric field intensity of reflection light is increased when an optical beam is irradiated at the substrate.

23. (New) A substrate for use in the producing method of a microarray of Claim 11, wherein a first reflecting layer is formed on the substrate, and at least one layer of light-permeable film is formed on the first reflecting layer, a refractive index of the light-permeable film being smaller than a refractive index of the substrate and larger than a refractive index of air, and the electric field intensity of reflection light is increased when optical beam is irradiated at the substrate.

24. (New) A method of producing a DNA microarray according to Claim 14 which comprises a step of controlling a reaction of the protective group of a nucleotide by giving a wavelength dependency to the light wave length absorption characteristic of the protective group of the nucleotide and by changing the wavelength of an irradiated optical beam.

25. (New) A substrate for use in the producing method of a microarray of Claim 14 characterized in that the substrate includes the address by protrudent pits and depressed pits, and has a storing region of a depressed part or a protrudent part of a pregroove or a flat region, a depressed pit or a protrudent pit with a form like a soccer stadium that can be identified by prepit.

26. (New) A substrate for use in the producing method of a microarray of Claim 15 which has a recordable portion on a specific area of the substrate.

27. (New) A substrate for use in the producing method of a microarray of Claim 14, wherein a first reflecting layer is formed on the substrate, and at least one layer of light-permeable film is formed on the first reflecting layer, a refractive index of the light-permeable film being smaller than a refractive index of the substrate and larger than a refractive index of air, and the electric field intensity of reflection light is increased when optical beam is irradiated at the substrate.